DOCUMENT RESUME

ED 209 848 EC 140 362

AUTHOR Bennett, Randy Elliot
TITLE The Special Education Teacher Diagnostician: Professional Training Needs.
PUB DATE 80
NOTE 14p.; Paper presented at the Annual International Conference of the Association for Children with Learning Disabilities (17th, Milwaukee, WI, February 29, 1980).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Disabilities; Educational Diagnosis; Educational Needs; *Knowledge Level; *Measurement Techniques; *Special Education Teachers; *Student Evaluation; Test Interpretation

ABSTRACT

Two studies were carried out to determine proficiency of special education teacher diagnosticians (N=95 and 39) in knowledge and application of basic measurement concepts (including reliability, validity, norms, criterion referenced interpretations, measures of central tendency and variability, and interpretive aids). Findings showed that both groups scored lower than college students in an introductory measurement course and achieved correct total score responses of 50% and 44% (100% maximum). Results suggested that the educational diagnosticians needed training in basic measurement concepts essential for appropriate test interpretations and decision making about identification and placement. (CL)

DOCUMENT RESUME

ED 209 848 EC 140 362

AUTHOR Bennett, Randy Elliot
TITLE The Special Education Teacher Diagnostician: Professional Training Needs.
PUB DATE 80
NOTE 14p.: Paper presented at the Annual International Conference of the Association for Children with Learning Disabilities (17th, Milwaukee, WI, February 29, 1980).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Disabilities; Educational Diagnosis; Educational Needs; *Knowledge Level; *Measurement Techniques; *Special Education Teachers; *Student Evaluation; Test Interpretation

ABSTRACT

Two studies were carried out to determine proficiency of special education teacher diagnosticians (N=95 and 39) in knowledge and application of basic measurement concepts (including reliability, validity, norms, criterion referenced interpretations, measures of central tendency and variability, and interpretive aids). Findings showed that both groups scored lower than college students in an introductory measurement course and achieved correct total score responses of 50% and 44% (100% maximum). Results suggested that the educational diagnosticians needed training in basic measurement concepts essential for appropriate test interpretations and decision making about identification and placement. (CL)

The Special Education Teacher Diagnostician: Professional Training Needs

Randy Elliot Bennett

Educational Testing Service

Presented as part of a panel presentation on the special education teacher diagnostician at the 17th Annual International Conference of the Association for Children with Learning Disabilities, Milwaukee, February 29, 1980.

The Special Education Teacher Diagnostician: Professional Training Needs

In the preceding presentation, Margaret Jo Shepherd (Note 1) reviewed the development and current status of the special education teacher diagnostician role. Special education teacher diagnosticians, or educational diagnosticians as they are now more commonly called, were defined as special education teachers who spend the major portion of their time engaged in the individual assessment of exceptional children. The competencies stressed as central to this role at the time of its inception in the late 1960s related primarily to knowledge of curriculum and instructional methodology. It was noted that this stress was generated by a desire for evaluations that were more instructionally oriented than was commonly the case. Proficiency in assessment, however, was not emphasized as a primary competency for diagnosticians at that time. Professor Shepherd went on to define assessment proficiency as those competencies necessary for (a) the selection, administration, and interpretation of formal tools and (b) the construction and use of informal procedures. Finally, she noted the current increased awareness in special education of the importance of assessment proficiency for child study personnel.

The lack of emphasis originally given assessment knowledge as a competency central to the diagnostician role led us to raise the question of educational diagnosticians' assessment proficiency. This question, like many others in special education, is not easily answered because it has not been adequately researched.

To provide some semblance of an answer to this question, Professor Shepherd and I conducted a study and replication of educational diagnosticians' proficiency in one aspect of assessment.

Study I[1]

Method

The aspect of assessment chosen for study was knowledge and ability to apply basic measurement concepts of use in test interpretation. These concepts included reliability, validity, norms, criterion-referenced interpretations, measures of central tendency and variability and interpretive aids. These six content areas and the process areas of knowledge and application were used to construct a test blueprint (see Table 1) which served as a framework for development of a test of measurement concepts. Items for the test were selected from a pool maintained by the Educational Psychology: Measurement and Evaluation Program at Teachers College, Columbia University. The pool is normally used for construction of exams in introductory courses offered by the program. Examples of items included in the final version of the 64-item test are presented in Table 2.

Subjects

The test of measurement concepts was given to 95 educational diagnosticians selected in a nonrandom manner from a population of 800 such professionals serving one U.S. state. All subjects reported holding master's degrees and 73% cited special education as a major field of graduate study. In addition, participants indicated an average of 60

graduate credits earned and five years experience as diagnosticians. Finally, the large majority reported subscribing to at least one professional journal (90%) and belonging to one professional organization (87%).

Results

Performance of educational diagnosticians on the test of measurement concepts was interpreted relative to maximum possible score (100% correct) and relative to the performance of a group of 119 students enrolled in an introductory measurement course at Teachers College. The course is geared to the needs of the classroom teacher and is meant to impart minimum competency in the basics of assessment in education.

Relative to maximum possible score, diagnosticians achieved an average of 50% correct on total score, 53% correct on knowledge, and 48% correct on application. In relation to students, diagnosticians performed 21 percentage points lower on total score; 19 points lower on knowledge, and 22 points lower on application. All differences between the student and diagnostician groups were significant at the .001 level.

Study II: Replication

Method

The 64-item test of measurement concepts created for use in Study I was also used in Study II. The method for the two studies was, therefore, essentially the same.

Subjects

Subjects for the replication were 39 diagnosticians selected in a nonrandom manner from 200 educational diagnosticians serving a major U.S. city school system. Most subjects reported holding the master's degree (92%) and more than half cited special education as a major field of graduate study (59%). In addition participants indicated an average of 55 graduate credits earned and one year's experience as educational diagnosticians. Finally, 28% of the group reported subscribing to at least one professional journal.

The test of measurement concepts was administered to the complete group of subjects in a standard-size classroom. Subjects were allowed as much time as needed to complete the test.

Results

As in Study I, performance on the test of measurement concepts was interpreted from two perspectives. In relation to maximum possible score, diagnosticians achieved an average of 44% correct for the total test, 46% correct for knowledge, and 41% correct for application. Relative to the performance of the group of 119 students cited in Study I, diagnosticians scored 27 percentage points lower on total score, 26 points lower on knowledge, and 29 points lower on application, with all differences significant at the .001 level. No significant differences were found between performance of the diagnosticians in Study I and those in Study II.

Conclusion

Results of the two research studies described in this paper suggest that measurement concepts of use in test interpretation are an area of training need for the populations of diagnosticians studied. Lack of proficiency in these concepts can result in the misinterpretation of assessment data, the provision of erroneous interpretations to decision makers, and the making of inappropriate decisions about the identification, programming, and placement of children.

In sum, we feel we have documented, within the complex that is assessment proficiency, a specific area of training need for educational diagnosticians.

Recommendations

1. Further research on educational diagnosticians' assessment knowledge and skill is badly needed. Such research is necessary in order to specify areas of training need for these professionals (Bennett & Lewis, Note 2). A framework for needs-assessment research is provided by PL 94-142 through its mandate for annual needs assessment of special education and related service personnel (U.S. Office of Education, 1977). Individuals with responsibility for statewide training efforts should ensure that the training needs of diagnosticians are addressed within this framework.

2. Inservice training in assessment based on the results of needs-assessment studies should be provided for educational diagnosticians. Support for such training is provided through PL 94-142's mandate for a Comprehensive System of Personnel Development (U.S. Office of Education, 1977) which requires inservice education addressing documented training needs for regular and special education personnel.

3. Certification for diagnosticians should include requirements for proficiency in the various aspects of assessment. Such requirements should also be made a part of certification for special education resource and classroom teachers.

4. Certification for educational diagnosticians should be nonpermanent and periodically renewable. Award of initial certification and recertification should be based in part on objective evaluation of knowledge, skill, and performance in those areas critical to success in the diagnostician role. An initial set of guidelines for such evaluation is provided by Bennett (in press).

5. The assessment proficiency area of basic measurement concepts should be included in future revisions of the Code of Ethics and Competencies for Teachers of Learning Disabled Children and Youth (DCLD, 1978).

Reference Notes

1. Shepherd, M. The special education teacher diagnostician: Role development and current status. Paper presented at the 17th Annual International Conference of the Association for Children with Learning Disabilities, Milwaukee, February 1980.

2. Bennett, R., & Lewis, M. Assessing the assessors: A necessary and important training function. Manuscript submitted for publication, 1980.

References

Bennett, R. Basic measurement competence in special education teacher diagnosticians (Doctoral dissertation, Teachers College, Columbia University, 1979). Dissertation Abstracts International, 1980, 40, 4996A. (University Microfilms No. 8006792)

Bennett, R. Methods for evaluating the performance of school psychologists. School Psychology Monograph, in press.

Division for Children with Learning Disabilities. Code of ethics and competencies for teachers of learning disabled children and youth. Kansas City, Kansas: Author, 1978.

U.S. Office of Education. Education of handicapped children: Implementation of Part B of the Education of the Handicapped Act. Federal Register, 1977, 42, 42474-42518.

Footnote

[1] A more comprehensive description of the methodology, subjects, and results of Study I is presented in Bennett (1980).

Table 1

Test Blueprint

Process	Content: Reliability	Validity	Norms	Measures of Central Tendency & Variability	Criterion-referenced Interpretations	Interpretive Aids	Totals
Knowledge	Definition SEm Reliability of differences Reliability coefficient Reliability & criterion-reference	Definition Validity coefficient	Uses Types of scores	Mean	Definition Limitations Uses	Uses of specific sources	
	(9)[a] 14%[b]	(4) 6%	(9) 14%	(1) 2%	(5) 8%	(5) 8%	(33) 52%
Application	Reliability coefficient SEm Confidence intervals	Evidence needed for different types	Interpretation of scores	Interpretation of scores given $\bar{x}$ & SD of test	Identifying appropriate situations for use	Selecting sources	
	(3) 5%	(7) 11%	(12) 19%	(5) 8%	(1) 2%	(3) 5%	(31) 48%
Totals	(12) 19%	(11) 17%	(21) 33%	(6) 9%	(6) 9%	(8) 13%	(64) 100%

[a] Numbers in parentheses indicate number of items

[b] All percentages are approximate and hence sometimes do not correctly sum across columns or rows

Table 2

Examples of Items Used on the Test of Measurement Concepts

1. In addition to knowing how precise and accurate a measurement procedure is, the most important thing to know is how

   *A. relevant it is to the decision we must make.
   B. adequate the units are in which scores are expressed.
   C. fair the procedure is to groups with differing backgrounds.
   D. much the procedure intrudes into the examinee's privacy.

2. Which of the following statements is justified in terms of the given information?

	Math Test	Spelling Test
John's score	60	35
Group mean	50	25
Standard deviation	10	6

   *A. John did better in spelling than in math.
   B. John did better in math than in spelling.
   C. John did equally well in both tests.
   D. There is no basis for comparing John's performance on the two tests.

3. If one wanted to find critical reviews of the Key Math Diagnostic Arithmetic Test, one might best consult

   *A. Buros--The Mental Measurements Yearbook
   B: Measurement and Evaluation in Guidance.
   C. the manual of the test.
   D. Educational and Psychological Measurement.

4. An individual's score on an achievement test is 75. The standard error of measurement for the test is reported to be five points. What are the chances that the individual's true score is between 70 and 80?

   A. About 9 chances in 10.
   *B. About 2 chances in 3.
   C. About 1 chance in 3.
   D. About 1 chance in 6.